

REMARKS

In the Office Action, the Examiner rejected Claims 1, 2, 4-6, 13, 15, 16, 18-20 and 29-30 under 35 U.S.C. 102(b) as being anticipated by Malhotra (US Patent 5,663,029).

Malhotra relates to electrostatic imaging process for copiers (the assignee is Xerox Corporation). Specifically, Malhotra embodies a process concerning making a copy of an image electrostatically. The process includes a coating that is used on a substrate which comprises a binder consisting of polyester and an additive wherein the additive can be aromatic anhydrides.

The currently amended Claim 1 of the present invention calls for a resin comprising the reaction product of polyester with substituted cyclic anhydride, said reaction product also containing an additive. Note that the additive in Claim 1 is not the same additive as called for in the Malhotra reference. The additive of the Malhotra reference is a cyclic anhydride. The additive compositions of the present invention, on the other hand, are set forth in Claim 14, for example. The present invention uses an anhydride as a carrier for the additive. Malhotra, on the other hand, is not a reaction product; it's just a mixture of polyester and an anhydride compound using a low temperature process. For example, the coating composition can include melt extrusion (see column 1, line 49). However, the melt extrusion isn't a high temperature process, but a low temperature process. As column 37 continues to explain the extrusion coating is applied when it is dissolved in a solvent (see line 62-65 of column 37). It is not a melt extrusion, it is an extrusion of a coating dissolved in a solvent. Accordingly, there is no reaction product between the anhydride and the polyester.

The binder as stated in column 4, lines 20-26 indicates that it is present from about 10 wt.% to about 90 wt.%. This is much higher than what is used in the present invention. As noted in Claim 7, for example, the maximum substituted cyclic anhydride

is 10,000 ppm (1 wt.%). This is substantially higher than the range of the present invention.

While it is noted that Malhotra states that the anhydrides are an additive having a melting point of more than about 65°C and a boiling point of more than about 150°C, it is unclear exactly what their purpose is. It is known, however, that the polyester and the cyclic anhydrides do not react with one another, and thus it is unclear what function the cyclic anhydride binder additive has. With no reaction, the binder does not bind the polyester.

With respect to Claim 15, for example, it calls for the process of reacting the cyclic anhydride with the polyester. Again, Malhotra does not disclose any reaction.

On page 2 of the Office Action the Examiner has rejected Claims 1, 2, 8, 10, 15, 22 and 24 under 35 U.S.C. 102(b) as being anticipated by Pfaendner et al (US Patent 5,693,681). The Pfaendner et al patent application discloses using a tetracarboxylic dianhydride for increasing the molecular weight of the polyester (see column 1, lines 41-58). The present invention discloses the reaction product of a polyester with substituted cyclic anhydride and an additive, whereas Pfaendner discloses a polyester with a tetracarboxylic dianhydride. The present invention employs a substituted cyclic anhydride which are useful as reactive carriers without forming byproducts that reduce the molecular weight of the polymer. Pfaendner does not recognize the use of substituted cyclic anhydrides as reactive carriers. Furthermore, it is noted that the substituted cyclic anhydrides of the present invention are generally in liquid form at the time of the injection (see the summary of the invention) as opposed to the tetracarboxylic acid dianhydrides, many of which are in solid form. It is clear that the anhydride versus the dianhydride was not contemplated as a reactive carrier for additives to be incorporated into polyester. In the Office Action, the Examiner states that Pfaendner discloses "substituted phthalic anhydrides". In fact, Pfaendner does not disclose a substituted phthalic anhydride. Pfaendner only discloses dianhydrides. Should the Examiner persist

in this view, it is requested that she specifically state where a “substituted phthalic anhydride” is disclosed.

On page 3 of the Office Action, the Examiner has rejected Claims 1-3, 5, 6, 14-17, 19, 20 and 27-30 under 35 U.S.C. 102(b) as being anticipated by Moeller (US Patent 6,630,050). Moeller discloses using PEG (polyethylene glycol) and polyurethane as a contact adhesive. This contact adhesive is then applied to paper for labels for bottles. More specifically, Moeller discloses using a polyurethane and PEG and a “structural element”. According to column 5, lines 21-43, the structural element can encompass anhydrides. Accordingly, Moeller does not disclose a polyester with an anhydride. This reference does not anticipate the claims as now amended.

On page 4 of the Office Action, the Examiner rejects Claims 1-3, 5-9, 14-17, 19-23, 27, 28, and 31-33 under 35 U.S.C. 103 as being unpatentable over Huang (US Patent 6,342,578) in view of Moeller. This rejection is respectfully traversed. Huang uses cyclic anhydride which is not substituted. None of the hydrides discloses in Huang are liquid at room temperature. Moeller discloses the use of anhydrides for polyurethanes. Moeller would not be a reference that teaches those skilled in the art to substitute the cyclic anhydrides of Huang for the substituted anhydrides of Moeller et al.

Contrary to the Examiner’s assertion, the burden is not on applicants to show the unexpected results for the use of substituted anhydrides versus the unsubstituted anhydrides. See *In Re Hedges*, 783 F. 2d 1038 (228 USP?? 685) When the burden is shifted to applicant, it is shifted to applicant under very narrow circumstances (*In re Hedges*). The circumstances of this combination of references by the Examiner does not merit such a shift. It is noted that Moeller et al is directed to a contact adhesive for paper. It would teach those skilled in the art absolutely nothing about making a polyester resin having high carboxyl end groups to reduce caustic stress cracking (the teachings of Huang).

On page 5 of the Office Action, the Examiner rejects Claims 12 and 26 under 35 U.S.C. 103 as being unpatentable over Moeller in view of Sanders. These claims have now been cancelled.

On page 6 of the Office Action, the Examiner rejects Claims 11 and 25 under 35 U.S.C. 103 as being unpatentable over Huang and Moeller in view of Yamamoto (Japanese patent 6100767). The Examiner states that Yamamoto teaches a resin of polyethylene naphthalate to be functionally equivalent to a resin formed by PET. This rejection is respectfully traversed. As stated previously with respect to the rejection under 35 U.S.C. of Huang in view of Moeller (see Claims 1-3, for example), these references are clearly not combinable. The Examiner states Yamamoto's teachings concerning the existence of a polyethylene naphthalate are functionally equivalent to PET. Slight clarification is provided by the Examiner when she says PET and PEN are "equivalent for use in a polyester resin" (see page 7 of Office Action). This clearly provides no basis for combining the references. Both PET and PEN are polyester and to state that they are "equivalent for use in polyester resin" does not clarify how and for what purpose they are equivalent. Moreover, Yamamoto does not cure the lack of good reasons to combine Huang and Moeller. Moreover, Huang, Moeller and Yamamoto do not teach substituted cyclic anhydrides reacted with polyesters.

In her remarks, the Examiner states that Moeller teaches ion-forming structural elements. This then becomes the basis for stating cyclic anhydrides react equivalently as substituted cyclic anhydrides. It is not a question of if the two anhydride groups react. A combination must teach or provide a reason (other than they react) why one skilled in the art would or should combine them. Chemistry and chemical reactions are unpredictable – *In re Marzocchi* (cited in last response). They are unpredictable because there is no guarantee that you will get the properties desired.

In view of the amended claims and the remarks set forth above, it is submitted that the present application is now in condition for allowance and such is earnestly solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Gregory N. Clements", is written over a horizontal line.

Gregory N. Clements

Registration No. 30,713

Attorney for Applicant

DOUGHERTY CLEMENTS

1901 Roxborough Road, Suite 300

Charlotte, North Carolina 28211 USA

Telephone: 704.366.6642

Facsimile: 704.366.9744

gclements@worldpatents.com

GNC/nb

F:\WPNET\KoSa\Patent\2003-03\OA Response 9-26-2006 w claims.doc